

RME MODEL 84

TRADE NAME RME Model 84
MANUFACTURER Radio Mfg. Engineers, Inc., Peoria (6), Ill.
TYPE SET AC Operated Multiband Communications Superheterodyne Receiver
TUBES (EIGHT) Types, 7B7 RF Amp., 7S7 Converter, 7B7 1st IF Amp., 7B7 2nd IF Amp., 7K7 Det.-AVC-AF, 7K7 N.L.-BFO, 6G6G Power Output, 5Y3G Rectifier.
POWER SUPPLY 110-120 Volts AC or 6V "A" Battery and 135V "B" Battery tapped at 90 Volts
RATING .620 Amps. @ 117V AC or 1.5 Amps. @ 6V DC and 32MA @ 135V DC
TUNING RANGE BAND 1, 540-1650KC; BAND 2, 1.65-5MC; BAND 3, 5-15MC; BAND 4, 15-44MC.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

"CW", "TR", "PH" switch should be on "CW", Noise Limiter off. Audio gain should be at maximum. RF Gain should be at maximum and output of signal generator no higher than necessary to obtain an output reading. On Bands III & IV it may be necessary to reduce RF Gain in order to prevent overloading by signal generator.
 BFO Tube 7K7 (#6) should be removed on all adjustments except when adjusting A7 for zero beat. On all bands oscillator should be working above the incoming signal. To check this, leave receiver at frequency and tune signal generator 910KC above the alignment frequency. The image signal should then be heard. If this image signal is not heard re-adjust oscillator and repeat the remaining adjustments for that band. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stat. of tuning cap. Low side to chassis.	455KC	I	Tuning cap. closed.	Across voice coil	A1,A2, A3,A4, A5,A6.	Adjust for maximum output.
.1 MFD.	"	"	"	"	"	A7	Turn B.O. pitch control vertical. Adjust for zero beat.
300Ω	High side to ext. ant. terminal board connection "A". Low side to "G" connection.	600KC	"	600KC	"	A8	Adjust for maximum output.
300Ω	"	1400KC	"	1400KC	"	A9	Adjust for maximum output. Repeat last two steps until no further improvement can be made.
300Ω	"	600KC	"	Tune for maximum output.	"	A10,A11	Adjust for maximum output.
300Ω	"	1400KC	"	"	"	A12,A13	Adjust for maximum output. Repeat last two steps until no further increase can be obtained.
300Ω	"	1.9MC	II	1.9MC	"	A14	Adjust for maximum output.
300Ω	"	5MC	"	5MC	"	A15	Adjust for maximum output. Repeat last two steps until no further improvement can be made.
300Ω	"	1.9MC	"	Tune for maximum output.	"	A16,A17	Adjust for maximum output.
300Ω	"	5MC	"	"	"	A18,A19	" " " " " " Repeat last two steps until no further increase can be obtained.
300Ω	"	10MC	III	10MC	"	A20	Adjust for maximum output.
300Ω	"	"	"	Tune for maximum output.	"	A21,A22	Rock variable and adjust for maximum output.
300Ω	"	30MC	IV	30MC	"	A23	Adjust for maximum output.
300Ω	"	"	"	Tune for maximum output.	"	A24,A25	Rock variable and adjust for maximum output.
THE FOLLOWING ADJUSTMENT SHOULD ONLY BE MADE WHEN ABSOLUTELY NECESSARY.							
300Ω	High side to ext. ant. terminal board connection "A". Low side to "G" connection.	15MC	IV	15MC	Across voice coil	A26	Adjust for maximum output. Repeat last three steps until no further improvement can be made.

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 16, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		BAA BASE TYPE	INSTALLATION NOTES
		RTE PART No.	STANDARD REPLACEMENT		
1	RF Amp.	7B7	7B7	8V	
2	Converter	7B7	7B7	8BL	
3	1st IF Amp.	7B7	7B7	8V	
4	2nd IF Amp.	7B7	7B7	8V	
5	Det., AVC-AF	7K7	7K7	8BF	
6	N.L.-BFO	7K7	7K7	8BF	
7	Power Output	606G	606G	7S	
8	Rectifier	5Y3G	5Y3G	5T	

CAPACITORS

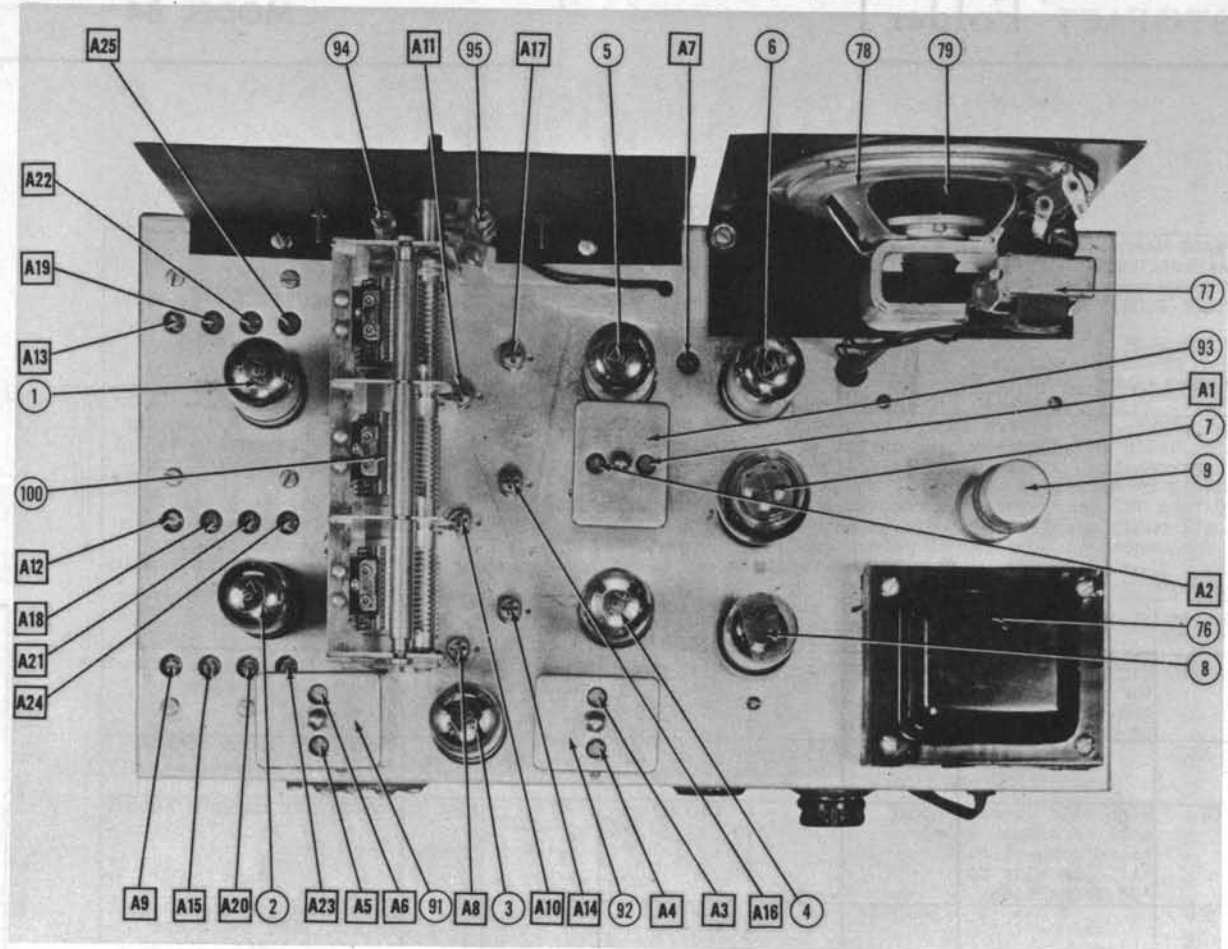
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	RTE PART No.	REPLACEMENT DATA		IDENTIFICATION CODES AND INSTALLATION NOTES
			SPRAGUE PART No.	CORNELL-DUBILIER PART No.	
9A	15 CAP. 450	EL-344AF44J	PR5450-10	UP8CJ47	Filter
9B	10 CAP. 450		PR5450-10		
9C	15 CAP. 25		PR5450-10		
10	20 CAP. 25		PR5450-10		
11	0.01 CAP. 600		TC-11 684-01	TC26	Output Cath. Bypass
12	0.01 CAP. 600		TC-11 684-01	DT8S1	Tone Compensation
13	0.01 CAP. 600		TC-11 684-01	DT8S1	Output Plate Bypass
14	0.01 CAP. 600		TC-11 684-01	DT8S1	Audio Coupling
15	0.01 CAP. 600		TC-11 684-01	DT8S1	BFO Plate Bypass
16	0.01 CAP. 600		TC-11 684-01	DT8S1	Audio Coupling
17	0.01 CAP. 600		TC-11 684-01	DT8S1	N.L. Bias Filter
18	0.01 CAP. 600		TC-11 684-01	DT8S1	AVC Filter
19	0.01 CAP. 600		TC-11 684-01	DT8S1	2nd IF Screen Bypass
20	0.01 CAP. 600		TC-11 684-01	DT8S1	2nd IF Cath. Bypass
21	0.01 CAP. 600		TC-11 684-01	DT8S1	1st IF Screen Bypass
22	0.01 CAP. 600		TC-11 684-01	DT8S1	1st IF Cath. Bypass
23	0.01 CAP. 600		TC-11 684-01	DT8S1	AVC Filter
24	0.01 CAP. 600		TC-11 684-01	DT8S1	Conv. Plate Decoupling
25	0.01 CAP. 600		TC-11 684-01	DT8S1	Conv. Screen Bypass
26	0.01 CAP. 600		TC-11 684-01	DT8S1	Conv. Cath. Bypass
27	0.01 CAP. 600		TC-11 684-01	DT8S1	Fixed Padder
28	0.01 CAP. 600		TC-11 684-01	DT8S1	Osc. Plate Decoupling
29	0.01 CAP. 600		TC-11 684-01	DT8S1	RF Plate Decoupling
30	0.01 CAP. 600		TC-11 684-01	DT8S1	RF Screen Bypass
31	0.01 CAP. 600		TC-11 684-01	DT8S1	RF Cath. Bypass
32	0.01 CAP. 600		TC-11 684-01	DT8S1	BFO Fixed Trimmer
33	0.01 CAP. 600		TC-11 684-01	DT8S1	BFO Grid Capacitor
34	0.01 CAP. 600		TC-11 684-01	DT8S1	Audio Grid Capacitor
35	0.01 CAP. 600		TC-11 684-01	DT8S1	Diode
36	0.01 CAP. 600		TC-11 684-01	DT8S1	EFO Coupling Cer.
37	0.01 CAP. 600		TC-11 684-01	DT8S1	Fixed Padder
38	0.01 CAP. 600		TC-11 684-01	DT8S1	"
39	0.01 CAP. 600		TC-11 684-01	DT8S1	"
40	0.01 CAP. 600		TC-11 684-01	DT8S1	RF Coupling
41	0.01 CAP. 600		TC-11 684-01	DT8S1	Osc. Plate Decoupling
42	0.01 CAP. 600		TC-11 684-01	DT8S1	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING	RTE PART No.	REPLACEMENT DATA		INSTALLATION NOTES
			MALLORY PART No.	CLAROSTAT PART No.	
43A	1 Meg. A	MR53	U13-137	M-53-2	Tone Control
43B	1 Meg. B	MR53	U13-137	M-53-2	Attach to 45A per instructions
44A	500K C	MR28	D14-120	M-50-2	RF Gain Control
45A	500K B	MR49	D13-133	M-50-2	Attach to 44A per instructions
45B	500K B	MR49	D13-133	M-50-2	Audio Gain Control-Late Production
45A	250K B	MR44	D13-130	M-54-2	Attach to 45A per instructions
45B	250K B	MR44	D13-130	M-54-2	Audio Gain Control-Early Production

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	RME PART No.	IRC PART No.	
46	220K		BTS-220K	BK-#150	Red-Red-V1. RF Grid
47	150K		BTS-150K	Br-#150	Br.-Grn.-Br. RF Cathode
48	47K		BTS-47K	Y1.-V1.-Gr. Bleeder	Y1.-V1.-Gr. Bleeder
49	4700		BTS-4700	Y1.-V1.-Red RF Screen Dropping	Y1.-V1.-Red RF Screen Dropping
50	22K		BTS-22K	Y1.-V1.-Red RF Plate Load	Y1.-V1.-Red RF Plate Load
51	4700		BTS-4700	Y1.-V1.-Red RF Plate Decoupling	Y1.-V1.-Red RF Plate Decoupling
52	22K		BTS-22K	Red-Red-Or. Oscillator Plate Decoupling	Red-Red-Or. Oscillator Plate Decoupling
53	220K		BK-#220	Red-Red-Br. Converter Cathode	Red-Red-Br. Converter Cathode
54	47K		BTS-47K	Y1.-V1.-Or. Oscillator Grid	Y1.-V1.-Or. Oscillator Grid
55	220K		BTS-220K	Red-Red-V1. Converter Screen Dropping	Red-Red-V1. Converter Screen Dropping
56	4700		BTS-4700	Y1.-V1.-Red Converter Plate Decoupling-See Note 1	Y1.-V1.-Red Converter Plate Decoupling-See Note 1
57	220K		BTS-220K	Y1.-V1.-Red 1st IF Screen Dropping	Y1.-V1.-Red 1st IF Screen Dropping
58	4700		BTS-4700	Y1.-V1.-Br. 2nd IF Cathode	Y1.-V1.-Br. 2nd IF Cathode
59	4700		BTS-4700	Br.-Blk.-Y1. BFO Plate Dropping	Br.-Blk.-Y1. BFO Plate Dropping
60	100K		BTS-100K	Br.-Blk.-Grn. AVC Network	Br.-Blk.-Grn. AVC Network
61	1 Meg.		BTS-1 Meg.	Br.-Blk.-Grn. Noise Limiter Network	Br.-Blk.-Grn. Noise Limiter Network
62	680K		BTS-680K	Blue-Gray-Y1. Noise Limiter Network	Blue-Gray-Y1. Noise Limiter Network
63	47K		BTS-47K	Y1.-V1.-Or. BFO Grid	Y1.-V1.-Or. BFO Grid
64	47K		BTS-47K	Red-Red-Y1. Diode Load	Red-Red-Y1. Diode Load
65	220K		BTS-220K	Red-Red-Or. AF Grid	Red-Red-Or. AF Grid
66	220K		BTS-220K	Red-Red-Y1. Output Grid	Red-Red-Y1. Output Grid
67	500K		BTS-500K	Grn.-Blk.-Br. Output Cathode	Grn.-Blk.-Br. Output Cathode
68	12K		BK-#12	Br.-Red-Blk. Headphone Shunt-See Note 2	Br.-Red-Blk. Headphone Shunt-See Note 2
69	100K		BTS-100K	Red-Red-Or. AF Plate Decoupling	Red-Red-Or. AF Plate Decoupling
70	100K		BTS-100K	Br.-Blk.-Y1. AF Plate Load	Br.-Blk.-Y1. AF Plate Load
71	22K		BTS-22K	Red-Red-Or. AF Plate Decoupling	Red-Red-Or. AF Plate Decoupling
72	100K		BTS-100K	Br.-Blk.-Y1. AF Plate Load	Br.-Blk.-Y1. AF Plate Load
73	4500		BK-#4500	Voltage Dropping-See Note 3	Voltage Dropping-See Note 3
74	5500		BK-#5500	Bleeder	Bleeder
75	620K		BTS-620K	Gray-Red-Br. AF Cathode	Gray-Red-Br. AF Cathode

Note 1 - Some models use 22K in this application

Note 2 - Some models use 33K in this application

Note 3 - On IRC replacement set slider @ 4500Ω from one end.

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA		INSTALLATION NOTES
	TOTAL D.C. CURRENT	INDUCTANCE (1000-)	RME PART No.	STANCOR PART No.	
75	.084A	570Ω	13 Henries	C-1709	T20C53

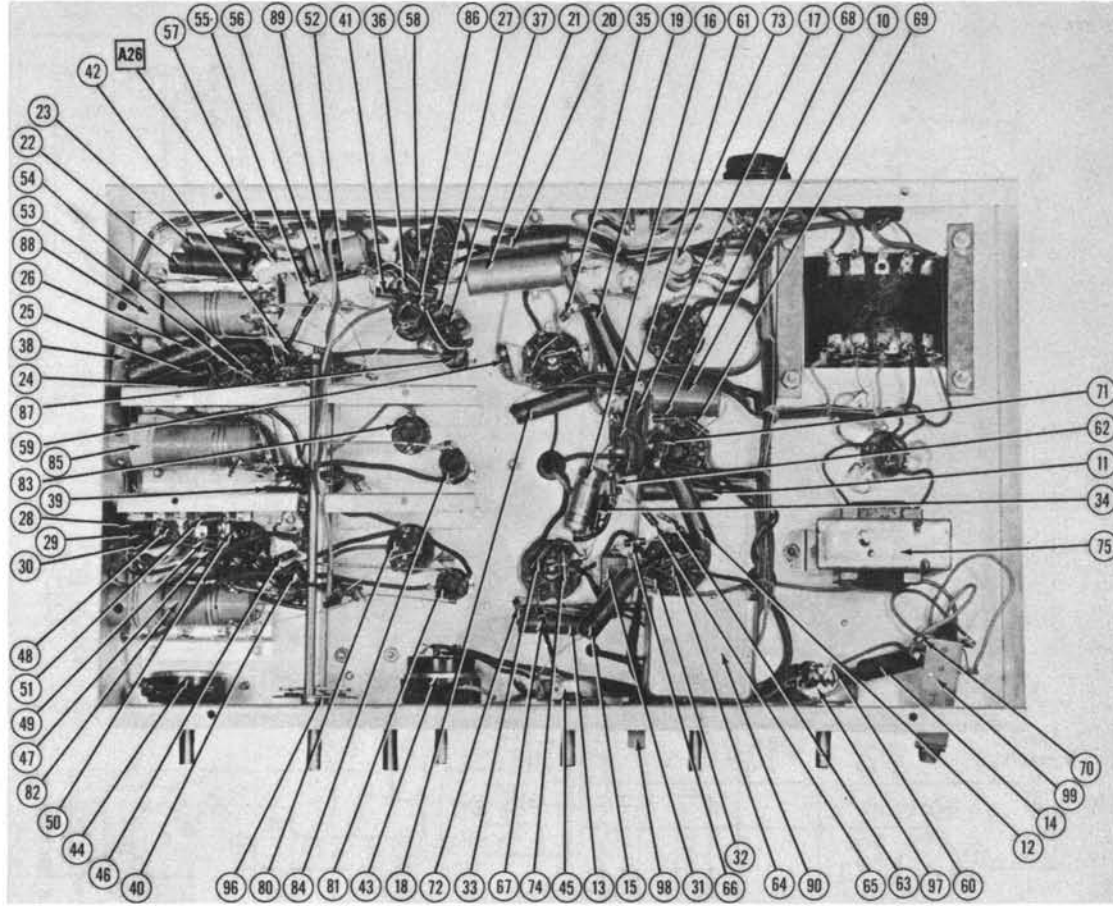
TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA	
	PRI.	SEC. 1	RME PART No.	STANCOR PART No.
76	117V AC 60V CT 1.6A @ 1.7A	SEC. 2 5.2V AC 6.5V AC 1.6A @ 1.7A	P-6013	T22R05

TRANSFORMER (OUTPUT)

ITEM No.	RATING		REPLACEMENT DATA		INSTALLATION NOTES
	IMPEDANCE	DC RES.	RME PART No.	STANCOR PART No.	
77	720Ω 3.4Ω	700Ω .7Ω	A-38781	T22S471	Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA		INSTALLATION NOTES
		RME PART No.	JENSEN PART No.	
78	FIELD VC IMP. 3.4Ω		ST-105	
79	CONE DIA. VC DIA. 4-3/4" 1/2"		Mod. PS-X	
		NOT READILY REPLACEABLE—USE COMPLETE SPEAKER UNIT.		

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	RME PART No.	MEISSNER PART No.
80 Ant. Coil 1	(Bar)	1.1Ω	2.7Ω		
81 " 2		.3Ω	.8Ω		
82A " 3		Ω	Ω		
B " 4		Ω	Ω		
83 RF Coil 1		3.5Ω	3.5Ω		
84 " 2		.8Ω	.8Ω		
85A " 3		Ω	Ω		
B " 4		Ω	Ω		
86 Osc. Coil 1		.4Ω	1.8Ω		
87 " 2		.3Ω	.7Ω		
88A " 3		Ω	Ω		
B " 4		Ω	Ω		
89 Osc. Series Coil			Ω		
90 BFO Coil			5.8Ω		
91 Input IF		8Ω	3.8Ω*	BL90B-2	
92 Inter. IF		8Ω	3.8Ω*	BL90B-2	
93 Output IF		8Ω	3.8Ω*	BL90B-2	
				*Measured from tap	

The terminals on the rear of chassis marked "A-A-Q" are for the antenna and ground connections. When the receiver leaves the factory there is a jumper between the ground post (Marked G) and the adjacent antenna post. Good results may be obtained by connecting a wire 50 to 75 feet long to the other "A" post. If a 2 wire feeder system is used, the jumper is removed and the two feeders are connected to "A" and "A". The input impedance between these points is approximately 300 ohms. A ground may be connected to the "G" post if it improves reception. For antennas designed to favor certain frequencies, the owner is referred to the various amateur radio handbooks available.

ANTENNA

NOISE LIMITER

An AUTOMATIC NOISE LIMITER is incorporated in the receiver circuit. No adjustment is required. The circuit is of a type that automatically adjusts itself to maximum effectiveness.

IMPORTANT

The action of the noise limiter is such that a slight amount of distortion is introduced on the signal. Therefore, when it is desirable to do so the noise limiter may be switched out of the circuit. This is controlled by the slide switch just below the control panel. When the switch is to the left the limiter is out of the circuit.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA		INSTALLATION NOTES
				BEAD COLOR	RME PART No.	
94	Bayonet	6-6	0.15	Brown		
95	"	6-8	0.15	"		

NOTE: CONTROLS AS FOLLOWS: PHONE NOISE LIMITER OFF, AUDIO GAIN MAXIMUM, TONE CONTROL AT "TREBLE", BAND SWITCH AT NO. 1 & RF GAIN AT MAXIMUM, C W SWITCH ON FOR NO. 6 TUBE READINGS.

VOLTAGE READINGS

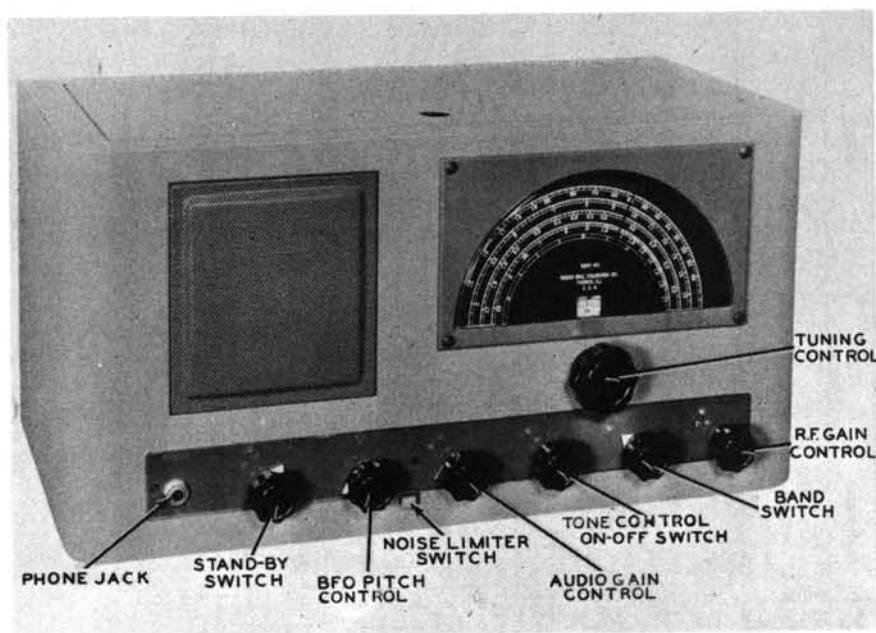
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7B7	6.5 VAC	110 VDC	110 VDC	2.9 VDC	0V.	-6 VDC	2.9 VDC	0V.
2	7S7	6.5 VAC	300 VDC	165 VDC	2.1 VDC	80 VDC	0V.	2 VDC	0V.
3	7B7	6.5 VAC	300 VDC	110 VDC	2.9 VDC	0V.	0V.	2.9 VDC	0V.
4	7B7	6.5 VAC	300 VDC	120 VDC	3.6 VDC	0V.	0V.	3.6 VDC	0V.
5	7K7	6.5 VAC	1 1/2 VDC	135 VDC	0V.	-45 VDC	-45 VDC	0V.	0V.
6	7K7	6.5 VAC	0V.	68 VDC	-8 VDC	-75 VDC	-75 VDC	0V.	0V.
7	6G6G	0V.	6.5 VAC	285 VDC	300 VDC	0V.	275 VDC	0V.	15 VDC
8	5Y3GT	0V.	360 VDC	0V.	330 VAC	0V.	330 VAC	0V.	360 VDC

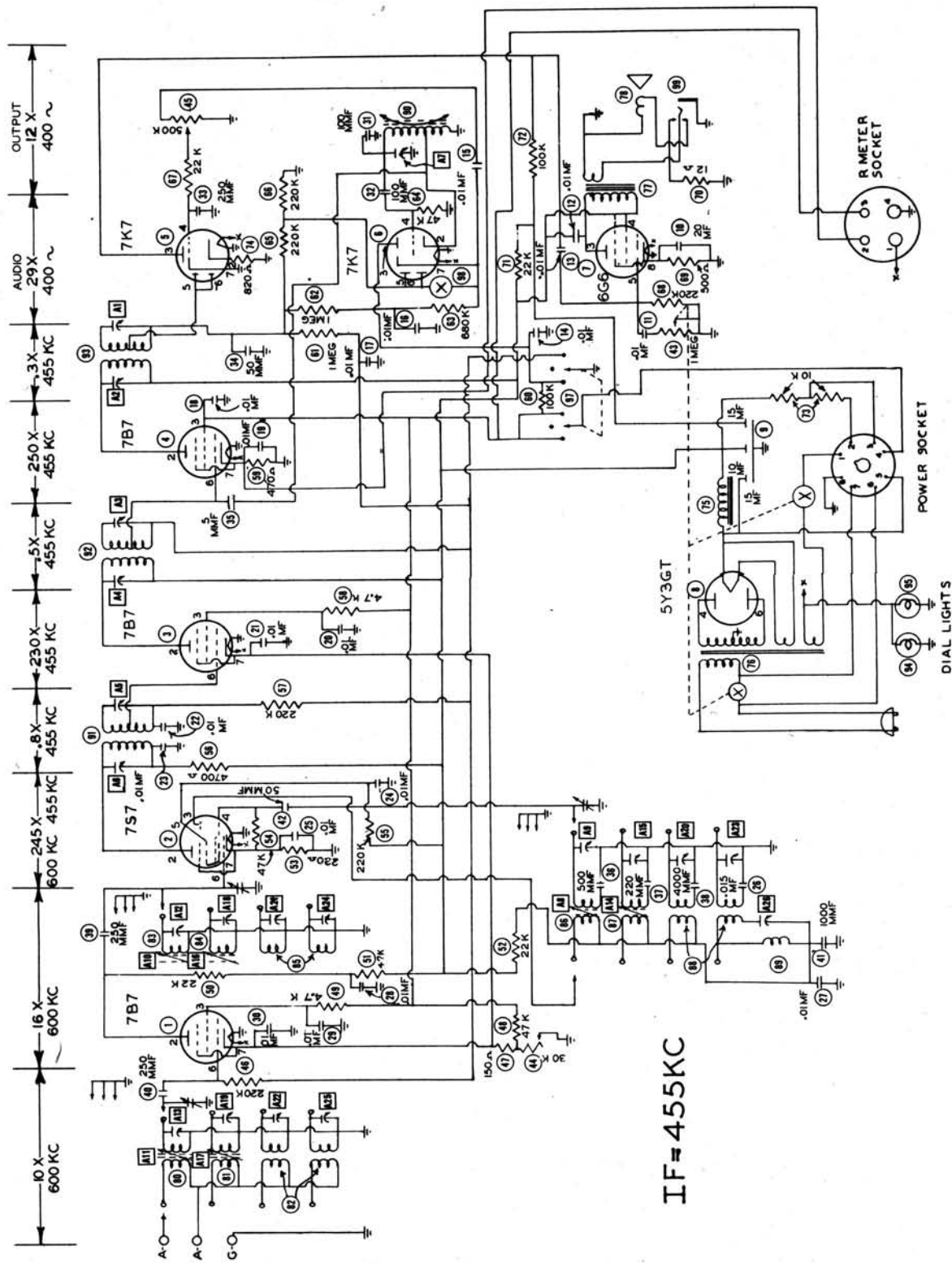
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7B7	.2 Ω	36 K Ω	14 K Ω	140 Ω	0 Ω	1.6 MEG.	140 Ω	0 Ω
2	7S7	.2 Ω	14 K Ω	31 K Ω	55 K Ω	185 K Ω	2.9 Ω	220 Ω	0 Ω
3	7B7	.2 Ω	9.5 K Ω	8 K Ω	140 Ω	0 Ω	1.6 MEG.	140 Ω	0 Ω
4	7B7	.2 Ω	9.5 K Ω	4 K Ω	450 Ω	0 Ω	1.3 MEG.	450 Ω	0 Ω
5	7K7	.2 Ω	800 Ω	132 K Ω	460 K Ω	350 K Ω	350 K Ω	0 Ω	0 Ω
6	7K7	.2 Ω	.5 Ω	110 K Ω	55 K Ω	168 K Ω	168 K Ω	1.6 MEG.	0 Ω
7	6G6G	870 K Ω	.2 Ω	9.5 K Ω	9 K Ω	172 K Ω	28 K Ω	0 Ω	450 Ω
8	5Y3GT	INF.	9.5 K Ω	INF.	100 Ω	INF.	92 Ω	INF.	9.5 K Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to 6. Volume control at maximum, no signal common negative.
- Line voltage maintained at 117 volts for voltage measurements.
- Nominal tolerance on component values makes possible a variation of $\pm 10\%$ in voltage and resistance readings.





474-13

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impossible. AVC is made inoperative and 3-volt battery bias substituted for measurement.